years before an answer can be given. But there is evidence now that manufacturers are accepting the challenge.

• General Electric Co. has begun to use huge, highly-automated tools to make turbines, and has redesigned large transformers so that they can be built on modular lines, allowing greater standardization.

• A hand-shovel maker stripped his product of nonessentials, mechanized his shop, and sells a good quality tool for just a few cents more than a Japanese import.

• Eastman Kodak Co. believes that mass production and constant new-product development, backed by heavy advertising, has helped it hold its place in a camera market flooded by imports.

The U.S. will this year be spending about $12.5 billion on research and development. Many observers predict that the new processes and products flowing from this massive effort will help the U.S. maintain, and possibly improve, its position in a highly competitive world. ♦

Plant Protection: They Shall Not Pass

WITH ELECTRONIC EYES AND EARS linked to an automatic nerve center, a new type of guard system can protect an industrial plant sprawled over several acres.

Aided by this electronic watchdog, one human guard seated at a master control center can immediately detect fires, keep an eye on all entrances, converse with anyone seeking entrance anywhere in the area, detect a sneak thief who might hide in a room until the buildings are closed, and perform other policing activities. Should the guard at the control center be overpowered by an intruder or collapse from illness, a warning is automatically flashed to police headquarters in the area.

The system, devised by Minneapolis-Honeywell Regulator Co., consists of a network of scattered electronic detection devices tied into a master control panel. These can include many components, such as noise and motion detectors, closed circuit television, two-way intercom systems, and an electronic fence. Use of a built-in compensator overcomes one old problem with such fences: The compensator prevents false alarms resulting from contact with the fence by birds, blowing paper, rain, sleet, snow, and wind.

The electronic network—which can also include fire detectors, holdup alarm switches, and magnetic controls that unlock gates from the master control center—gives centralized control over as many, or as few, buildings as desired. A test installation of the new system has been in operation for some time at the company's Brown Instruments Division in Philadelphia, and another system is presently being installed in the Chicago Art Institute.

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